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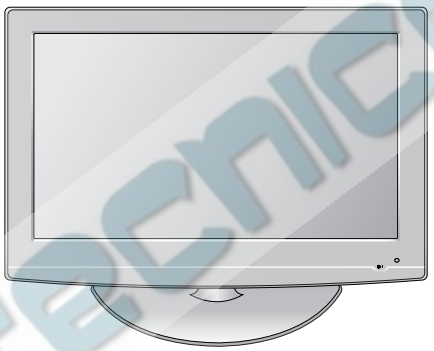
# TELEVISOR A LCD
# MANUAL DE SERVICIO

**CHASIS : LP81A**

## MODELO : 42LG30R 42LG30R-MA

**ATENCIÓN**

Antes de dar servicio al chasis, lea las PRECAUCIONES DE SEGURIDAD en este manual.



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# PRECAUCIONES DE SEGURIDAD

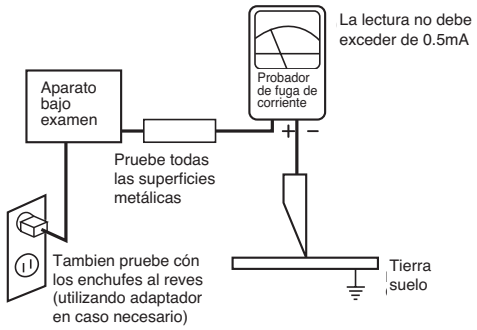
**ADVERTENCIA:** Antes de dar servicio a este chasis, lea "PRECAUCIONES RESPECTO A RADIACION POR RAYOS X", "INSTRUCCIONES DE SEGURIDAD" y "AVISO SOBRE SEGURIDAD DE PRODUCTOS"

## INSTRUCCIONES DE SEGURIDAD

1. Cuando el receptor está en operación, se producen voltajes potencialmente tan altos como 25,000-29,000 voltios. Operar el receptor fuera de su gabinete o con la tapa trasera removida puede causar peligro de choque eléctrico.
   (1) Nadie debe intentar dar servicio si no está debidamente familiarizado con las precauciones que son necesarias cuando se trabaja con un equipo de alto voltaje.
   (2) Siempre descargue el ánodo del tubo de la imagen a tierra para evitar el riesgo de choque eléctrico antes de remover la tapa del ánodo.
   (3) Descargue completamente el alto potencial del tubo de imagen antes de manipularlo. El tubo de la imagen es de alto vacío y, si se rompe, los fragmentos de vidrio salen despedidos violentamente.
2. Si se quemara algún fusible de este receptor de televisión, reemplácelo con otro especificado en la lista de partes.
3. Cuando reemplace tableros o plaquetas de circuitos, cuidadosamente enrolle sus alambres alrededor de las terminales antes de soldar.
4. Cuando reemplace un resistencia de vataje (resistor de película de óxido metálico) en el Tablero o Plaqueta de circuitos, mantenga la resistencia a un mínimo de 10mm de distancia.
5. Mantenga los alambres lejos de componentes de alto voltaje o de alta temperatura.
6. Este receptor de televisión debe conectarse a una fuente de 100 a 240 V AC.
7. Antes de devolver este aparato al cliente, haga una verificación de fuga de corriente sobre las partes metálicas del gabinete expuestas, tales como antenas, terminales, cabezas de tornillos, tapas de metal, palancas de control etc., para estar seguro de que el equipo funciona sin peligro de choque eléctrico. Enchufe el cordón directamente al tomacorriente de la línea de AC 100-240V.

No utilice una línea aislada de transformador durante esta verificación. Use un voltímetro de 1000 Ohmios por voltio de sensibilidad o más, en la forma que se describe a continuación.

Cuando la unidad está ya conectada a la AC, pulse el conmutador primero poniéndolo en "ON" (encendiendo) y luego en "OFF" (apagando), mida desde un punto de tierra conocido, tal como una (cañería de metal, una manija metálica, una tubería etc.) a todas las partes metálicas expuestas del receptor de televisión (antenas, manijas de metal, gabinetes de metal, cubiertas de metal, palancas de control etc.,) especialmente cualquiera de las partes metálicas expuestas que puedan ofrecer un camino hacia el chasis. Ninguna medición de corriente eléctrica debe exceder de 0.5 miliamperios. Repita la prueba cambiando la posición del enchufe en el tomacorriente. Cualquier medición que no esté dentro de los límites especificados aquí representan un riesgo potencial de choque eléctrico que debe ser eliminado antes de devolver el equipo al cliente.


La lectura no debe exceder de 0.5mA
Probador de fuga de corriente
Aparato bajo examen
+
–
Pruebe todas las superficies metálicas
Tambien pruebe cón los enchufes al reves (utilizando adaptador en caso necesario)
Tierra suelo

## AVISO SOBRE SEGURIDAD DE PRODUCTOS

Muchas de las partes, electricas y mecánicas en este chasis tienen caracteristicas relacionadas con la seguridad. Estas caracteristicas frecuentemente pasan desapercibidas en las inspecciones visuales y la proteccion que proporcionan contra la RADIACION DE RAYOS-X no siempre necesariamente se obtiene al mismo grado cuando se reemplazan piezas o componentes diseñados para voltajes o vatajes mayores, etc. Las piezas que tienen estas caracteristicas de seguridad se identifican por la marca ⚠ impresa sobre el diagrama esquematico y la marca ★ impresa en la lista de partes. Antes de reemplazar alguno de esos componente, lea cuidadosamente la lista de este manual. El uso de partes de reemplazo que no tengan las mismas caracteristicas de seguridad, como se especifica en la lista de partes, puede crear Radiacion de Rayos-X.

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# ESPECIFICACIONES

NOTA: las especificaciones que reflejan mejoras en los productos están sujetos a cambios sin previo aviso.

## 1. Application Range.

This spec sheet is applied to the 37"/42"/47"/52" LCD TV used LP81A chassis.

## 2. Specification

Each part is tested as below without special appointment

2.1 Temperature : 25±5°C(77±9°F), CST : 40±5°C
2.2 Relative Humidity : 65±10%
2.3 Power Voltage : Standard input voltage
(100~240V@ 50/60Hz)
• Standard Voltage of each products is marked by models
2.4 Specification and performance of each parts are followed each drawing and specification by part number in accordance with BOM .
2.5 The receiver must be operated for about 20 minutes prior to the adjustment.

## 3. Test method

3.1 Performance : LGE TV test method followed.
3.2 Demanded other specification
Safety : UL, CSA, IEC specification
3.3 EMC : FCC, ICES, IEC specification

## 4. General Specification(TV)

| No | Item | Specification | Measurement | Result | Remark |
|---|---|---|---|---|---|
| 1. | Display Screen Device | 37" wide Color Display Module | | | Resolution:1366X768(HD) |
| | | 42" wide Color Display Module | | | Resolution:1366X768(HD)/1920*1080(FHD) |
| | | 47" wide Color Display Module | | | Resolution:1366X768(HD)/1920*1080(FHD) |
| | | 52" wide Color Display Module | | | Resolution:1920X1080(FHD) |
| 2. | Aspect Ratio | 16:9 | | | |
| 3. | LCD Module | 37" TFT WXGA LCD | | | 37" HD MAKER :LPL |
| | | 42" TFT WXGA LCD | | | 42" HD MAKER :AUO, LPL |
| | | 47" TFT WXGA LCD | | | 47" HD MAKER :LPL |
| | | 42" TFT WUXGA LCD | | | 42" FHD MAKER : LPL |
| | | 47" TFT WUXGA LCD | | | 47" FHD MAKER : LPL |
| | | 52" TFT WUXGA LCD | | | 52" FHD MAKER : SHARP |
| 4. | Operating Environment | 1) Temp. : 0 ~ 40 deg | | | LGE SPEC |
| | | 2) Humidity : 0 ~ 85% | | | |
| 5. | Storage Environment | 1) Temp. : -20 ~ 60 deg | | | |
| | | 2) Humidity : 0 ~ 85 % | | | |
| 6. | Input Voltage | AC100 ~ 240V, 50/60Hz | | | |

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| No | Item | Specification | | | Measurement | Result | Remark |
|---|---|---|---|---|---|---|---|
| 7. | Power Consumption | Power on (Blue) : LG30/LG50<br>Power on (White) : LG60 | | | | | Volume: 1/8 volume of<br>sound distortion point |
| | | ≤ TBD | 37" | HD | | | |
| | | ≤ 250W | 42" | HD | | | |
| | | ≤ 230W | | FHD | | | |
| | | ≤ 320W | 47" | HD | | | |
| | | ≤ 310W | | FHD | | | |
| | | ≤ 350W | 52" | FHD | | | |
| | | St-By (Red)<br>≤ 1.0 W (All) | | | | | LG60:St-by Light condition |

| 8 | LCD Module<br>(Maker :<br>AUO, CMO, CPT,<br>LPL, SHARP) | Maker | | Inch | (H)x(V)x(D) | unit | Remark |
|---|---|---|---|---|---|---|---|
| | | AUO(HD) | Outline Dimension | 42" | 983 x 576 x 52.7 | mm | [with inverter] |
| | | | Pixel Pitch | | 0.681 x 0.681 | mm | |
| | | | Back Light | | 18 CCFL | mm | |
| | | CMO<br>(FHD) | Outline Dimension | 42" | - | mm | |
| | | | Pixel Pitch | | - | mm | |
| | | | Back Light | | - | mm | |
| | | LPL(HD) | Outline Dimension | 37" | 877 x 516.8 x 55.5 | mm | [with inverter] |
| | | | Pixel Pitch | | 0.200 x 0.600 | mm | |
| | | | Back Light | | 16 EEFL | mm | |
| | | | Outline Dimension | 42" | 983 x 576 x 51 | mm | [with inverter] |
| | | | Pixel Pitch | | 0.227 x 0.681 | mm | |
| | | | Back Light | | | mm | |
| | | | Outline Dimension | 47" | 1096 x 640 x 51 | mm | [with inverter] |
| | | | Pixel Pitch | | 0.76125 x 0.76125 | mm | |
| | | | Back Light | | | mm | |
| | | LPL(FHD) | Outline Dimension | 42" | 983 x 576 x 47.3/(51) | mm | [w/o inverter]/(with inverter) |
| | | | Pixel Pitch | | 0.4845 x 0.4845 | mm | |
| | | | Back Light | | | mm | |
| | | | Outline Dimension | 47" | 1096 x 640 x 50/(51) | mm | [w/o inverter]/(with inverter) |
| | | | Pixel Pitch | | 0.5415 x 0.5415 | mm | |
| | | | Back Light | | | mm | |
| | | SHARP<br>(FHD) | Outline Dimension | 52" | 1219.0x706.7x64.64 | mm | (W) x (H) x (D) |
| | | | Pixel Pitch | | 0.600 x 0.600 | mm | (H) x (V) |
| | | | Back Light | | 24CCFL | | |
| | | Display Colors | | | - | - | |
| | | Coating | | | 3H,AG/ 2H, AG | | LPL,CMO,AUO / Sharp |

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## 5. Chrominance & Luminance Specification

| No | Item | | | Min | Typ | Max | Unit | Maker | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Luminance | | | 400 | 500 | | cd/m$^2$ | AUO 42" HD | -50cm from the surface |
| | (W/O PC mode) | | | 400 | 500 | | | LPL 37" HD | - Full White Pattern |
| | | | | 400 | 500 | | | LPL 42" HD | |
| | | | | 400 | 450 | | | LPL 47" HD | |
| | | | | 400 | 500 | | | LPL 42" FHD | |
| | | | | 400 | 500 | | | LPL 47" FHD | |
| | | | | 360 | 450 | | | SHARP 52" FHD | |
| 2 | Color Coordinate | White | X | Typ. | 0.280 | Typ. | | AUO 42" | 42LG30R-TA |
| | | | Y | -0.03 | 0.290 | +0.03 | | (HD) | |
| | | Red | X | | 0.640 | | | T420XW01-VB | |
| | | | Y | | 0.330 | | | | |
| | | Green | X | | 0.290 | | | | |
| | | | Y | | 0.600 | | | | |
| | | Blue | X | | 0.150 | | | | |
| | | | Y | | 0.060 | | | | |
| | | White | X | Typ. | 0.279 | Typ. | | LPL 37" (HD) | 37LG30R/37LG60UR |
| | | | Y | -0.03 | 0.292 | +0.03 | | LC370WXN-SAA1 | |
| | | Red | X | | 0.636 | | | | |
| | | | Y | | 0.335 | | | | |
| | | Green | X | | 0.284 | | | | |
| | | | Y | | 0.610 | | | | |
| | | Blue | X | | 0.144 | | | | |
| | | | Y | | 0.063 | | | | |
| | | White | X | Typ. | 0.279 | Typ. | | LPL 42" | 42LG30RA-TA |
| | | | Y | -0.03 | 0.292 | +0.03 | | (HD) | |
| | | Red | X | | 0.635 | | | | |
| | | | Y | | 0.344 | | | | |
| | | Green | X | | 0.286 | | | | |
| | | | Y | | 0.614 | | | | |
| | | Blue | X | | 0.146 | | | | |
| | | | Y | | 0.061 | | | | |
| | | White | X | Typ. | 0.270. | Typ. | | LPL47" | |
| | | | Y | -0.03 | 0.292 | +0.03 | | (HD) | |
| | | Red | X | | 0.638 | | | | |
| | | | Y | | 0.342 | | | | |
| | | Green | X | | 0.296 | | | | |
| | | | Y | | 0.615 | | | | |
| | | Blue | X | | 0.144 | | | | |
| | | | Y | | 0.064 | | | | |

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| No | Item | | | Min | Typ | Max | Unit | Maker | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | | White | X | Typ. | 0.279 | Typ. | | LPL 42" (FHD) | 42LG60FR-TA |
| | | | Y | -0.03 | 0.292 | +0.03 | | LC420WUE-SAB1 | 42LG50FR-TA |
| | | Red | X | | 0.640 | | | LC420WUN-SAB1 | |
| | | | Y | | 0.335 | | | | |
| | | Green | X | | 0.289 | | | | |
| | | | Y | | 0.610 | | | | |
| | | Blue | X | | 0.144 | | | | |
| | | | Y | | 0.066 | | | | |
| | | White | X | Typ. | 0.279 | Typ. | | LPL 47" (FHD) | 47LG60FR-MA |
| | | | Y | -0.03 | 0.292 | +0.03 | | LC470WUE-SAB1 | 47LG50FR-TA |
| | | Red | X | | 0.640 | | | LC470WUN-SAB1 | |
| | | | Y | | 0.335 | | | | |
| | | Green | X | | 0.289 | | | | |
| | | | Y | | 0.610 | | | | |
| | | Blue | X | | 0.144 | | | | |
| | | | Y | | 0.066 | | | | |
| | | White | X | Typ. | 0.272 | Typ. | | SHARP 52" | 52LG50FR-TA |
| | | | Y | -0.03 | 0.277 | +0.03 | | (FHD) | |
| | | Red | X | | 0.640 | | | LK520D3LZ17 | |
| | | | Y | | 0.330 | | | | |
| | | Green | X | | 0.280 | | | | |
| | | | Y | | 0.600 | | | | |
| | | Blue | X | | 0.150 | | | | |
| | | | Y | | 0.060 | | | | |
| 3 | Contrast ratio | | | 1000:1 | 1500:1 | | | AUO 42" (HD) | |
| | (W/O PC mode) | | | 840:1/800:1 | 1200:1 | | | LPL 32"/37" (HD) | |
| | | | | 800:1 | 1200:1 | | | LPL 42" (HD) | |
| | | | | 700:1 | 1200:1 | | | LPL 47" (HD) | |
| | | | | TBD | 1500:1 | | | LPL 42"/47" (FHD) | |
| | | | | 1000:1 | 1500:1 | | | SHARP 52" (FHD) | |
| 4 | Luminance Variation | | | | | 1.3 (1.25) | | All w/o Sharp 52" | (Sharp 52") |

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## 6. SET Optical Feature

6.1. General feature

- Measurement Condition: Full white/ Vivid => Measure the black luminance after 30 seconds.
- C/R is excepted for PC mode

| No | Parameter | | Symbol | Value | | Unit | Remark |
|---|---|---|---|---|---|---|---|
| | | | | Min | Typ | | |
| 1 | 37 inch(HD) LPL | Contrast Ratio | Dynamic CR | 9000:1 | 12000:1 | | |
| | | Surface Luminance, white | LWH (AV/Component/HDMI) | 360 | 450 | | Cd/m2 |
| | | | LWH (PC) | 250 | | | Cd/m2 |
| 2 | 42 inch(HD) AUO | Contrast Ratio | Dynamic CR | 9000:1 | 12000:1 | | |
| | | Surface Luminance, white | LWH (AV/Component/HDMI) | 360 | 450 | | Cd/m2 |
| | | | LWH(PC) | 250 | | | Cd/m2 |
| 3 | 42 inch(HD) LPL | Contrast Ratio | Dynamic CR | 9000:1 | 12000:1 | | |
| | | Surface Luminance, white | LWH (AV/Component/HDMI) | 360 | 450 | | Cd/m2 |
| | | | LWH(PC) | 250 | | | Cd/m2 |
| 4 | 47 inch(HD) LPL | Contrast Ratio | Dynamic CR | 9000:1 | 12000:1 | | |
| | | Surface Luminance, white | LWH(AV/Component/HDMI) | 360 | 450 | | Cd/m2 |
| | | | LWH(PC) | 250 | | | Cd/m2 |
| 5 | 42 inch(FHD) LPL | Contrast Ratio | Dynamic CR | 9000:1 | 12000:1 | | |
| | | | | TBD | 15000 : 1 | | For 50/60/70 Tool |
| | | Surface Luminance, white | LWH(AV/Component/HDMI) | 360 | 450 | | Cd/m2 |
| | | | LWH(PC) | 250 | | | Cd/m2 |
| 6 | 47 inch(FHD) LPL | Contrast Ratio | Dynamic CR | 9000:1 | 12000:1 | | |
| | | | | TBD | 15000 : 1 | | For 50/60/70 Tool |
| | | Surface Luminance, white | LWH(AV/Component/HDMI) | 360 | 450 | | Cd/m2 |
| | | | LWH(PC) | 250 | | | Cd/m2 |
| 7 | 52 inch(FHD) Sharp | Contrast Ratio | Dynamic CR | 9000:1 | 12000:1 | | |
| | | | | TBD | 15000 : 1 | | For 50/60/70 Tool |
| | | Surface Luminance, white | LWH(AV/Component/HDMI) | 320 | 400 | Cd/m2 | |
| | | | LWH(PC) | 250 | | Cd/m2 | |

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## 7. Component Video Input (Y, $P_B$, $P_R$)

| No. | Specification | | | | Remark |
|---|---|---|---|---|---|
| | Resolution | H-freq(kHz) | V-freq(Hz) | Pixek clock | |
| 1. | 720*480 | 15.73 | 59.94 | 13.500 | SDTV, DVD 480I(525I) |
| 2. | 720*480 | 15.75 | 60.00 | 13.514 | SDTV, DVD 480I(525I) |
| 3. | 720*576 | 15.625 | 50.00 | 13.500 | SDTV, DVD 576I(625I) 50Hz |
| 4. | 720*480 | 31.47 | 59.94 | 27.000 | SDTV 480P |
| 5. | 720*480 | 31.50 | 60.00 | 27.027 | SDTV 480P |
| 6. | 720*576 | 31.25 | 50.00 | 27.000 | SDTV 576P 50Hz |
| 7. | 1280*720 | 44.96 | 59.94 | 74.176 | HDTV 720P |
| 8. | 1280*720 | 45.00 | 60.00 | 74.250 | HDTV 720P |
| 9. | 1280*720 | 37.50 | 50.00 | 74.25 | HDTV 720P 50Hz |
| 10. | 1920*1080 | 28.125 | 50.00 | 74.250 | HDTV 1080I 50Hz, |
| 11. | 1920*1080 | 33.72 | 59.94 | 74.176 | HDTV 1080I |
| 12. | 1920*1080 | 33.75 | 60.00 | 74.25 | HDTV 1080I |
| 13. | 1920*1080 | 56.25 | 50 | 148.5 | HDTV 1080P |
| 14 | 1920*1080 | 67.432 | 59.94 | 148.350 | HDTV 1080P |
| 15 | 1920*1080 | 67.5 | 60.00 | 148.5 | HDTV 1080P |

## 8. RGB Input (Analog PC)

| No. | Resolution | H-freq(kHz) | V-freq(Hz) | Pixel clock(MHz) | Proposed | Remark |
|---|---|---|---|---|---|---|
| 1. | 640*350 | 31.468 | 70.80 | 25.17 | EGA | |
| 2 | 720*400 | 31.469 | 70.08 | 28.32 | DOS | |
| 3. | 640*480 | 31.469 | 59.94 | 25.17 | VESA(VGA) | |
| 4 | 800*600 | 37.879 | 60.31 | 40 | VESA(SVGA) | |
| 5 | 1024*768 | 48.363 | 60 | 65 | VESA(XGA) | |
| 6 | 1280*768 | 47.776 | 59.87 | 79.5 | VESA(WXGA) | |
| 7 | 1360*768 | 47.72 | 59.799 | 84.75 | VESA(WXGA) | |
| 8 | 1366*768 | 47.7 | 60 | 84.62 | VESA(WXGA) | |
| 9 | 1280*1024 | 63.668 | 59.895 | 109.00 | SXGA | Only FHD |
| 10 | 1400*1050 | 65.317 | 59.978 | 121.75 | SXGA | Only FHD |
| 11 | 1600*1200 | 74.537 | 59.869 | 161.00 | UXGA | Only FHD |
| 12 | 1920*1080 | 66.587 | 59.934 | 138.50 | WUXGA (Reduced Blanking) | Only FHD |

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### 9. HDMI Input (PC-Spec. out but display correctly at only HDMI/DVI IN 1 via DVI to HDMI cable)

| No. | Resolution | H-freq(kHz) | V-freq(Hz) | Pixel clock(MHz) | Proposed | Remark |
|---|---|---|---|---|---|---|
| 1. | 720x400 | 31.468 | 70.08 | 28.32 | | |
| 2. | 640x480 | 31.469 | 59.94 | 25.17 | VESA(VGA) | |
| 3. | 800x600 | 37.879 | 60.31 | 40.00 | VESA(SVGA) | |
| 4 | 1024x768 | 48.363 | 60.00 | 65.00 | VESA(XGA) | |
| 5 | 1280x768 | 47.776 | 59.87 | 79.5 | VESA(WXGA) | |
| 6 | 1360x768 | 47.72 | 59.799 | 84.62 | VESA(WXGA) | |
| 7 | 1366x768 | 47.7 | 60 | 84.62 | VESA(WXGA) | |
| 8 | 1280x1024 | 63.595 | 60.0 | 108.875 | SXGA | Only FHD |
| 9 | 1400x1050 | 65.160 | 60.0 | 122.50 | SXGA | Only FHD |
| 10 | 1600x1200 | 74.077 | 60.0 | 130.375 | UXGA | Only FHD |
| 11 | 1920x1080 | 66.647 | 59.988 | 138.625 | WUXGA | Only FHD |

### 10. HDMI input ( DTV )

| No. | Resolution | H-freq(kHz) | V-freq(Hz) | Pixel clock(MHz) | Proposed | Remark |
|---|---|---|---|---|---|---|
| 1 | 720*480 | 31.47 | 59.94 | 27 | SDTV 480P | Support(not spec) |
| 2 | 720*480 | 31.5 | 60 | 27.027 | SDTV 480P | support(not spec) |
| 3 | 720*576 | 31.25 | 50 | 27 | SDTV 576P | support(not spec) |
| 4 | 1280*720 | 44.96 | 59.94 | 74.176 | HDTV 720P | |
| 5 | 1280*720 | 45 | 60 | 74.25 | HDTV 720P | |
| 6 | 1280*720 | 37.5 | 50 | 74.25 | HDTV 720P | |
| 7 | 1920*1080 | 28.125 | 50 | 74.25 | HDTV 1080I | |
| 8 | 1920*1080 | 33.72 | 59.94 | 74.176 | HDTV 1080I | |
| 9 | 1920*1080 | 33.75 | 60 | 74.25 | HDTV 1080I | |
| 10 | 1920*1080 | 56.25 | 50 | 148.5 | HDTV 1080P | |
| 11 | 1920*1080 | 67.432 | 59.94 | 148.350 | HDTV 1080P | |
| 12 | 1920*1080 | 67.5 | 60.00 | 148.5 | HDTV 1080P | |
| 13 | 1920*1080 | 27 | 24 | 74.25 | HDTV 1080P | |
| 14 | 1920*1080 | 33.75 | 30 | 74.25 | HDTV 1080P | |

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# INSTRUCCIÓN DE AJUSTE

## 1. Application Range

These instructions are applied to all of the LCD TV, LP81A Chassis.

## 2. Notice

2.1 Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
2.2 Adjustment must be done in the correct order.
2.3 The adjustment must be performed in the circumstance of 25±5°C of temperature and 65±10% of relative humidity if there is no specific designation.
2.4 The input voltage of the receiver must keep 100~220V, 50/60Hz.
2.5 Before adjustment, execute Heat-Run for 15 minutes at RF no signal.

## 3. Adjustment items

### 3.1 PCB assembly adjustment items

Download the MSTAR main software (IC801, Mstar ISP Utility)

### 3.2 SET assembly adjustment items

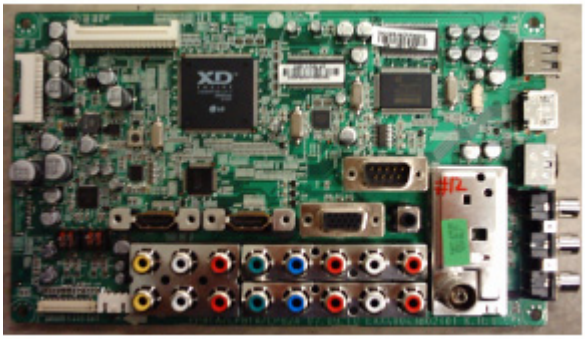
DDC Data input.
Adjustment of White Balance.
Factoring Option Data input

## 4. PCB assembly adjustment method (Using MSTAR Download program)

### 4.1 S/W program download

4.1.1 Preliminary steps
(1) Download method 1 (PCB Assy)
- HD

- FHD



(2) Connect the download jig to D-sub jack

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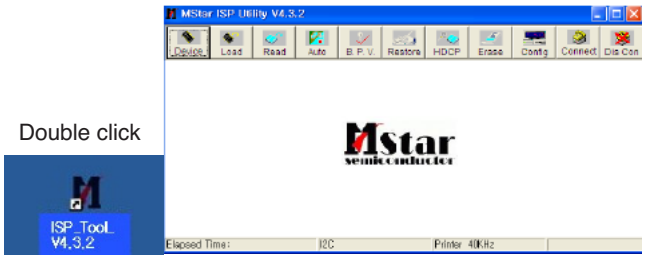
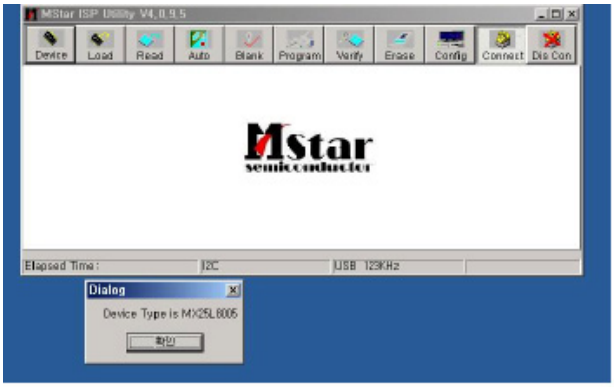
4.1.2 Download steps

(1) Execute 'ISP Tool' program in PC, then a main window will be opened

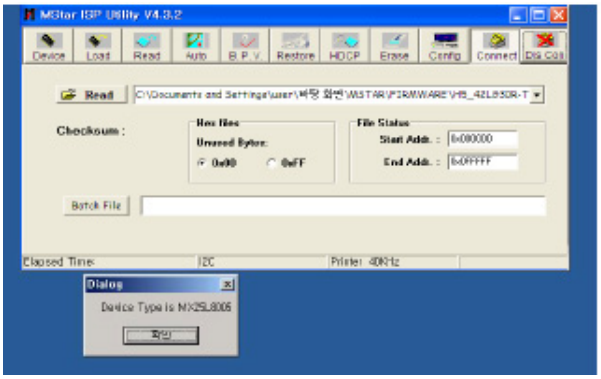
Double click



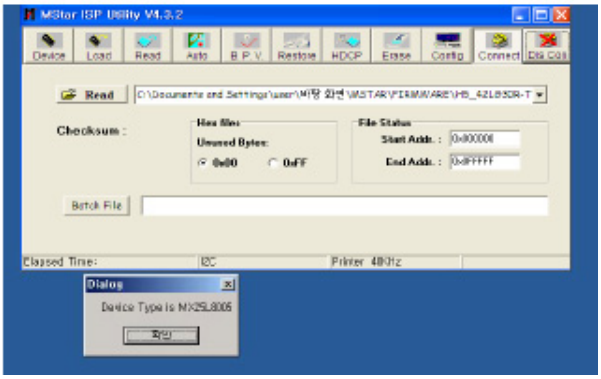

(2) Click the connect button and confirm "Dialog Box".



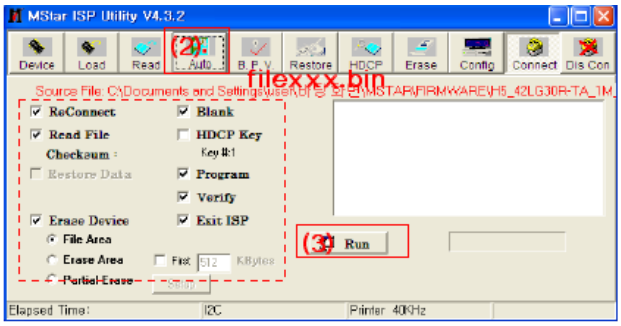

(3) Click the Config button and Change speed
E2PROM Device setting : over the 350Khz




(4) Read and write bin file
Click "(1)Read" tab, and then load download file(XXXX.bin) by clicking "Read".

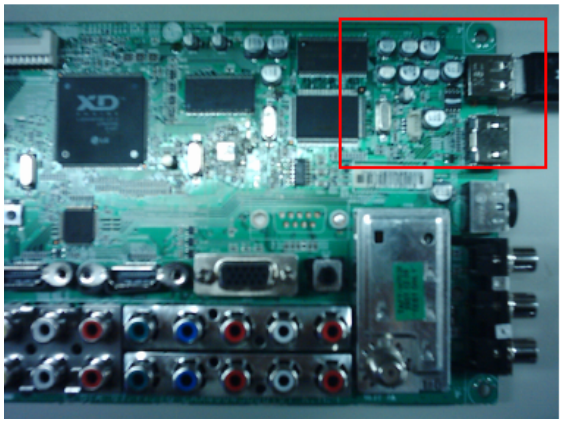


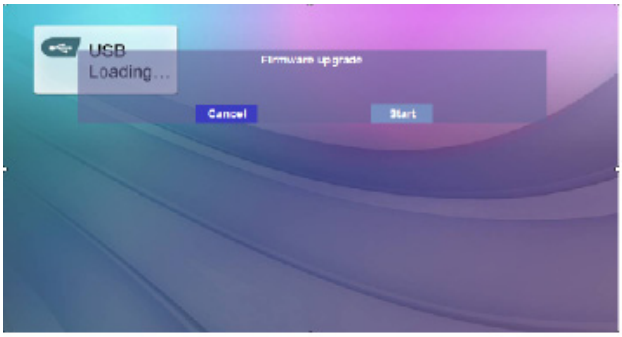

(5).Click "Auto(2)" tab and set as below
(6).click "Run(3)".
(7).After downloading, check "OK(4)" message.



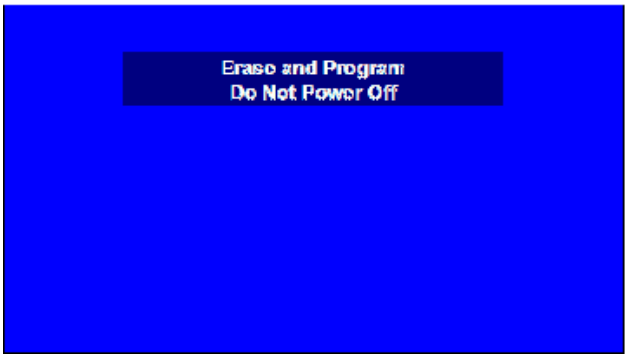

# USB DOWNLOAD

1. Put the USB Stick to the USB socket






2. Automatically detecting update file in USB Stick

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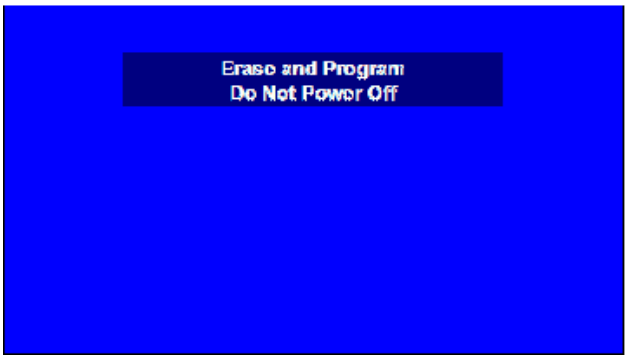
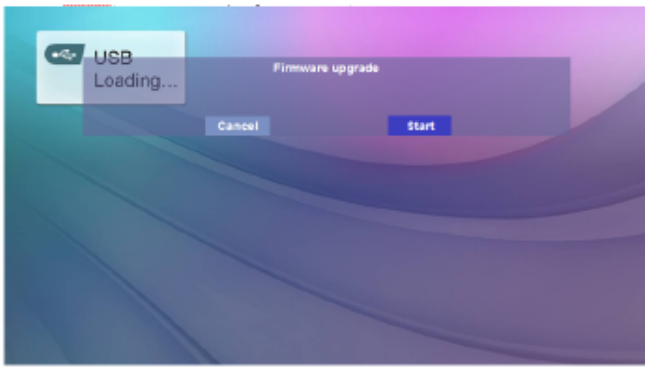
3. Select "Start" Button and press "ok" button
   Updating is staring.




4. Finishing the version updating, you have to put out USB stick and "AC Power" off
5. After putting "AC Power" on and check updated version on your TV

### 4.2 ADC Process

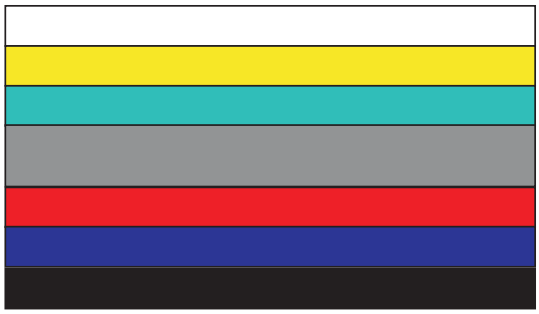
● Required Equipments
- Remote controller for adjustment
- MSPG-925F Pattern Generator

4.2.1 Method of Auto RGB Color Balance
- Convert to RGB PC in Input-source
- Input the PC 1024x768 @ 60Hz 1/2 Black & White Pattern(MSPG-925F model:60, pattern:54) into RGB

- Adjust by commanding AUTO_COLOR_ADJUST(0xF1) 0x00 0x02 instruction.

4.2.1.1 Confirmation
- We confirm whether "0xF3 (offset), 0xF4 (gain)" address of EEPROM "0xBC" is "0xAA" or not.
- If "0xF3", "0xF4" address of EEPROM "0xBC" isn't "0xAA", we adjust once more
- We can confirm the ADC values from "0x06~0x0B" addresses in a page "0xBC"
  *Manual ADC process using Service Remocon. After enter Service Mode by pushing "ADJ" key, execute "Auto-RGB" by pushing "_" key at "Auto-RGB".

4.2.2 Component input ADC
4.2.2.1 Component Gain/Offset Adjustment7
- Convert to Component in Input-source
- Input the Component ( Which has 720p@60Hz YPbPr signal : 100% Color Bar (MSPG-925F Model : 217 / Pattern: 65 ) into Component.



- Adjust by commanding AUTO_COLOR_ADJUST (0xF1) 0x00 0x02 instruction

4.2.2.2 Confirmation
- We confirm whether "0xF3 (offset), 0xF4 (gain)" address of EEPROM "0xBC" is "0xAA" or not.
- If "0xF3", "0xF4" address of EEPROM "0xBC" isn't "0xAA", we adjust once more
- We can confirm the ADC values from "0x06~0x0B" addresses in a page "0xBC"
  *Manual ADC process using Service Remocon. After enter Service Mode by pushing "ADJ" key, execute "Auto-RGB" by pushing "_" key at "Auto-RGB".

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# 5. Adjusting the White Balance

## 5.1 Purpose and Principle for adjustment of the color temperature

- Purpose : Adjust the color temperature to reduce the deviation of the module color temperature.
- Principle : To adjust the white balance without the saturation,

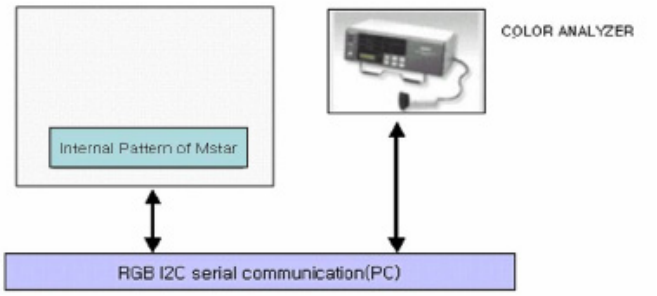
(Fix the one of R/G/B gain to C0 and decrease the others.)

## 5.2 Adjustment mode : Two modes of Cool and Warm (Medium data is automatically calibrated by the Cool data)

● Required Equipments

- Remote controller for adjustment
- Color Analyzer : CA100+ or CA-210 or same product
  LCD TV( ch : 9 ),
- Auto W/B adjustment instrument(only for Auto adjustment)

## 5.3 Connecting diagram of equipment for measuring (For Automatic Adjustment)




(1) Enter the adjustment mode of DDC
- Set command delay time : 50ms
- Enter the DDC adjustment mode at the same time heat-
- Maintain the DDC adjustment mode with same condition of Heat-run
- -> Maintain after AC off/on in status of Heat-run pattern display)

(2) Release the DDC adjustment mode
- Release the adjust mode after AC off/on or std-by off/on in status of finishing the Hear-run mode
- Release the Adjust mode when receiving the aging off command(F3 00 00) from adjustment equipment
- Need to transmit the aging off command to TV set after finishing the adjustment.
- Check DDC adjust mode release by exit key and release DDC adjust mode

(3) Enter the adjust mode of white balance
- Enter the white balance adjustment mode with aging command(F3, 00, FF)

*** Luminance min value is 200cd/ß≥ in the cool mode( For LCD)**

# 6. Adjustment of White Balance

• Adjustment mode : Two modes (Cool and Warm)
(Medium data is automatically calibrated by the Cool data)
• Color analyzer(CA100+, CA210) should be used in the calibrated ch by CS-1000
(LCD : CH9, PDP : CH10)
• Operate the zero-calibration of the CA100+ or CA-210, then stick sensor to the module when adjusting.
• For manual adjustment, it is also possible by the following sequence.

1) Select white pattern of heat-run by pressing "POWER ON" key on remote control for adjustment then operate heat run longer than 15 minutes.
(If not executed this step, the condition for W/B may be different.)
2) Push "Exit" key.
3) Change to the AV mode by remote control.(Push front-AV or Input key)
4) Input external pattern(85% white pattern)
5) Push the ADJ key two times (entering White Balance mode)
6) Stick the sensor to the center of the screen and select each items (Red/Green/Blue Gain and Offset) using ▲/▼ (CH +/-) key on R/C..
7) Adjust R/ G/ B Gain using ◀/▶(VOL+/-) key on R/C.
8) Adjust two modes (Cool and Warm)
(Fix the one of R/G/B and change the others)
9) When adjustment is completed, Exit adjustment mode using EXIT key on R/C.

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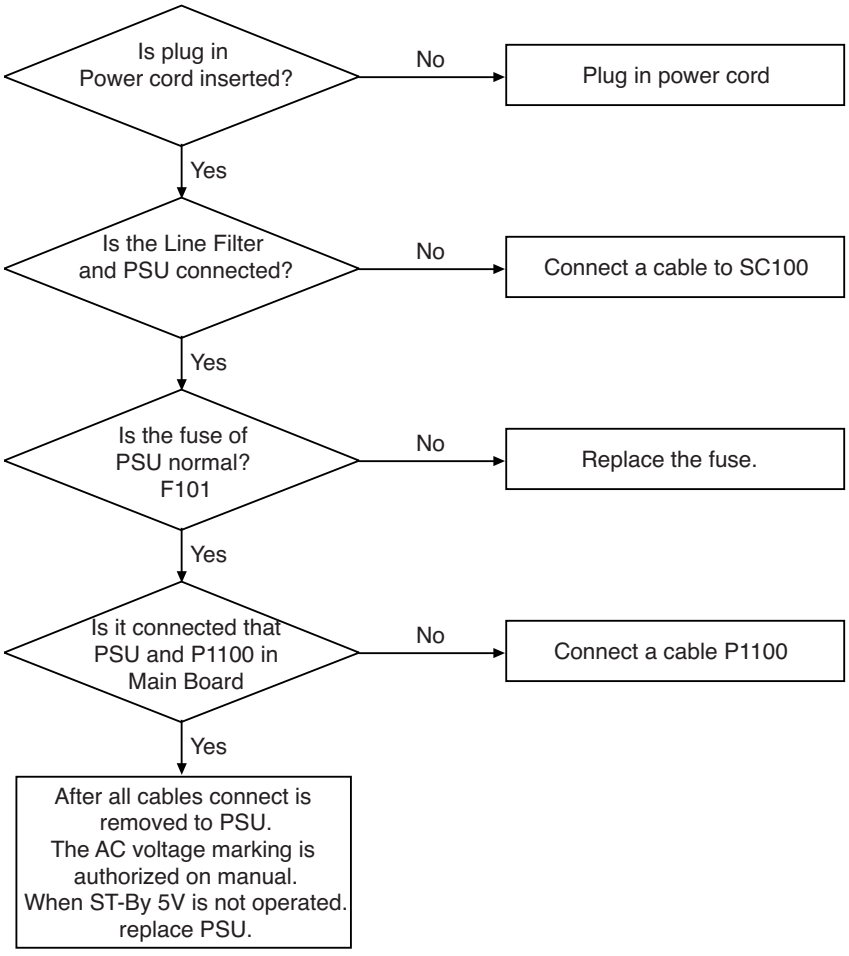
# SOLUCIÓN DE PROBLEMAS

## 1. No power

1) Symptom

1) It is not discharged minutely from the module.
2) Light doesnotcome into the front LED.

2) Check process


Is plug in Power cord inserted?
No
Plug in power cord
Yes
Is the Line Filter and PSU connected?
No
Connect a cable to SC100
Yes
Is the fuse of PSU normal? F101
No
Replace the fuse.
Yes
Is it connected that PSU and P1100 in Main Board
No
Connect a cable P1100
Yes
After all cables connect is removed to PSU. The AC voltage marking is authorized on manual. When ST-By 5V is not operated. replace PSU.

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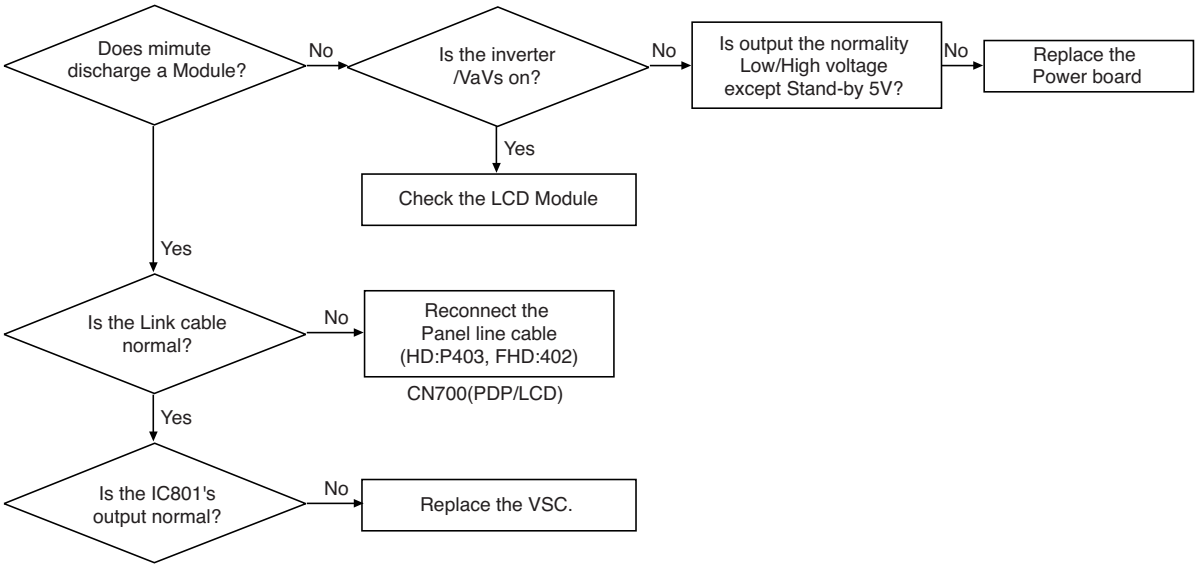
## 2. No Raster

1) Symptom

1 OSD and image occur at screen.

2) It maintains the condition where the front LED is green

2) Check process

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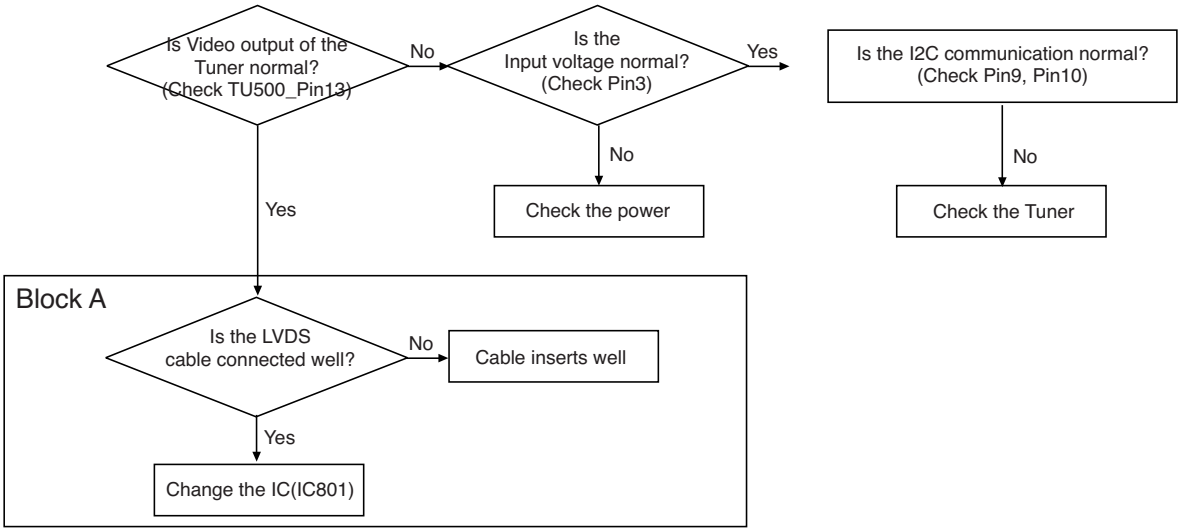
## 3. Unusual display from RF mode.

1) Check process

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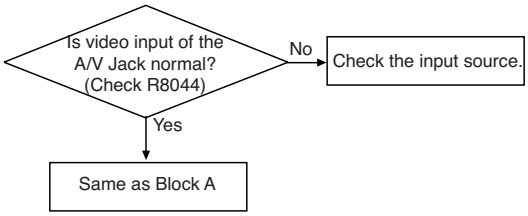
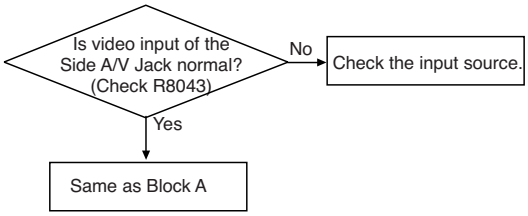
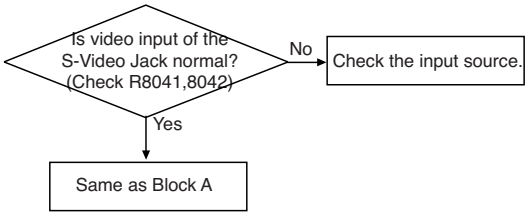
## 4. Unusual display from rear AV mode



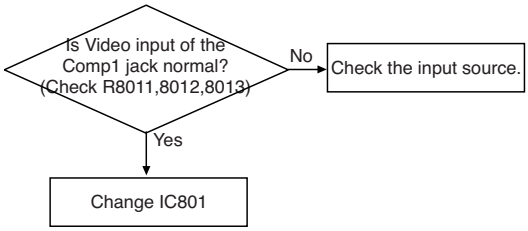

## 5. Unusual display from Side AV mode.



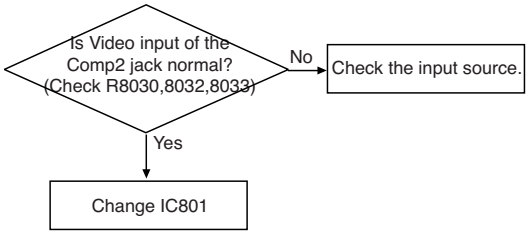

## 6. Unusual display from Side S-Video mode.



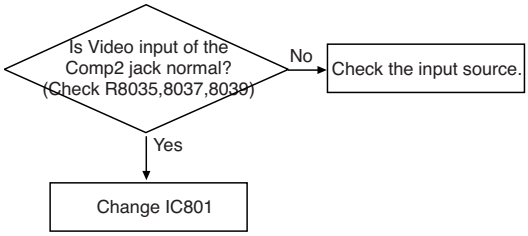

## 7. Unusual display from componert 1 mode.




## 8. Unusual display from component 2 mode.




## 9. Unusual display from RGBmode.

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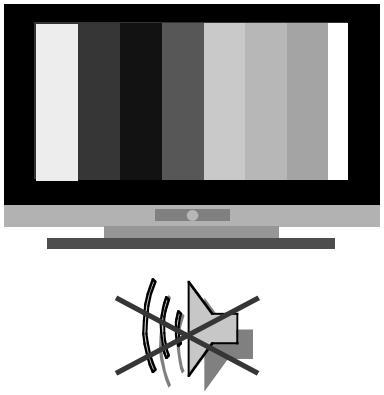
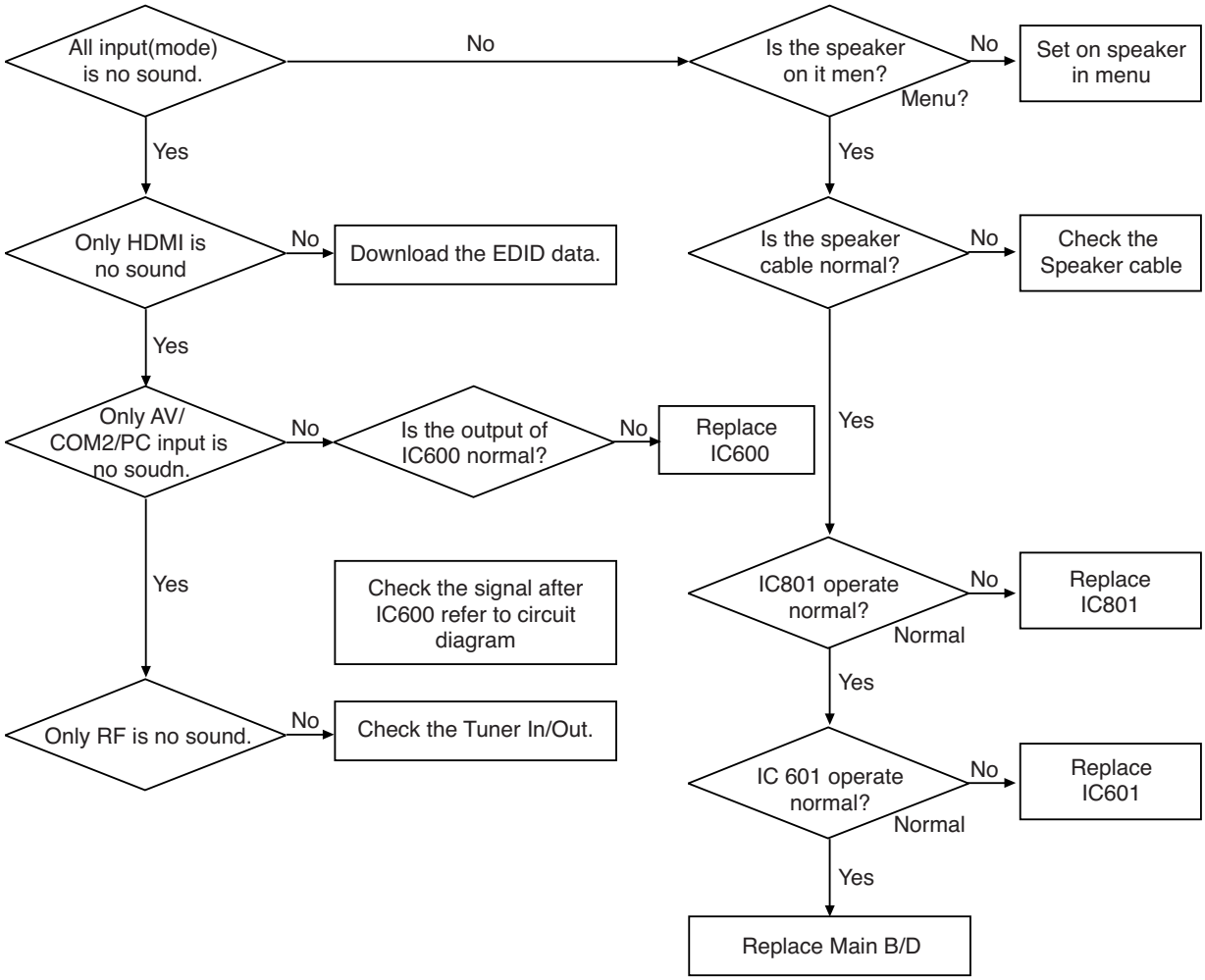
# 10. No Sound

10-1 Symptom

1) LED is green.
2) Screen display but sound is not output.



10-2 Check process

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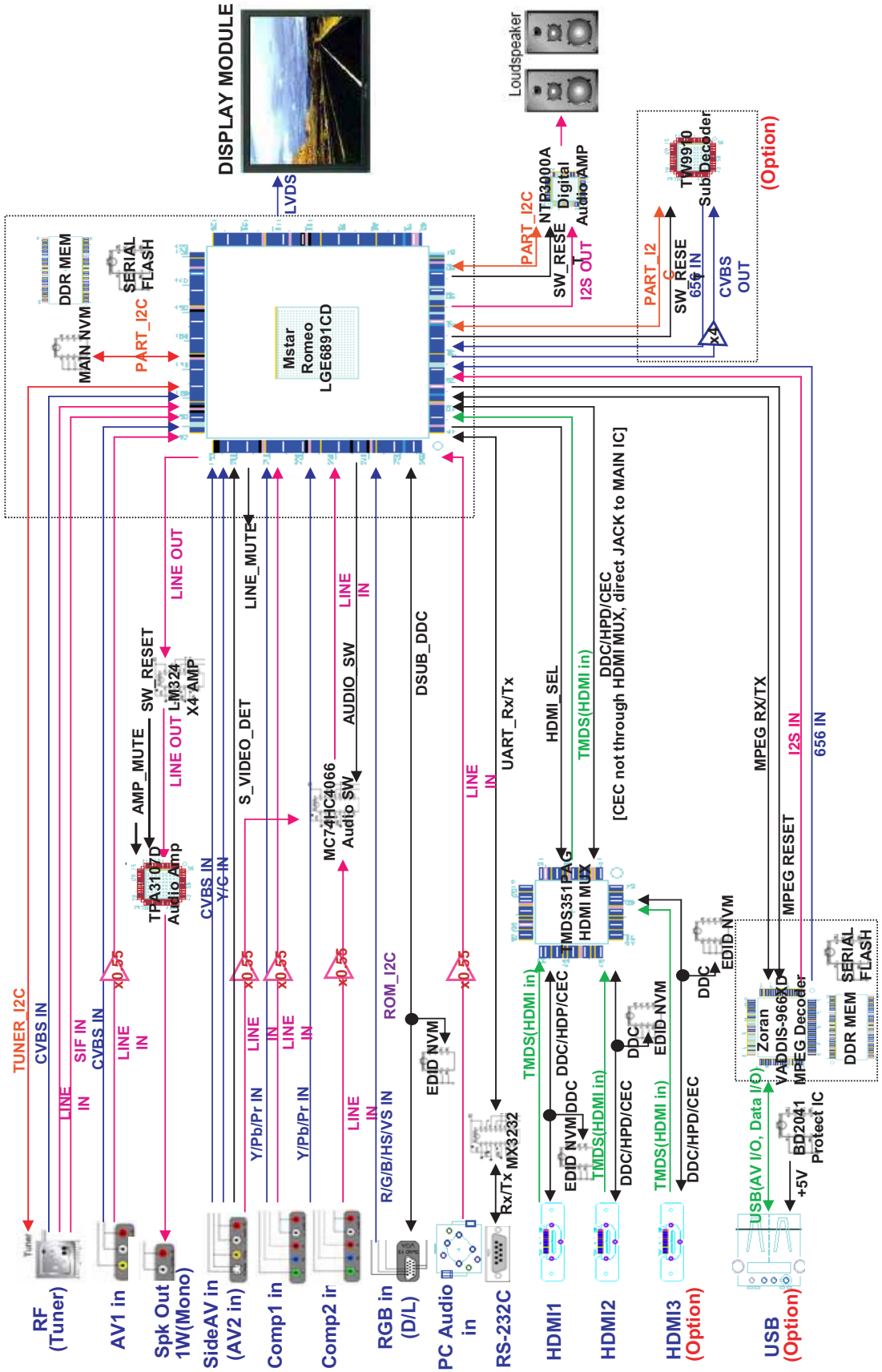
# DIAGRAMA DE BLOQUE

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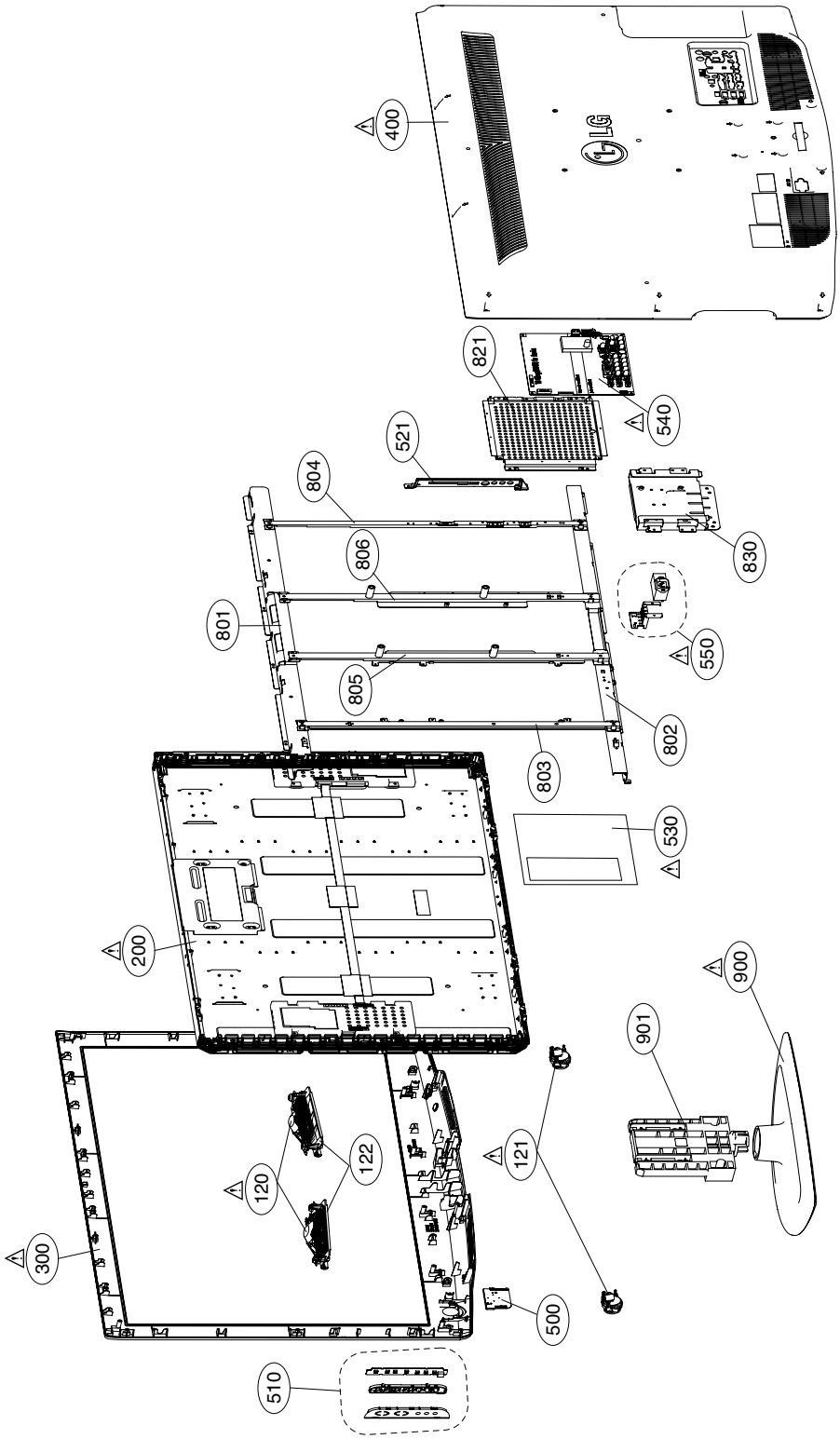
# VISTA EN DESPIECE

**IMPORTANT SAFETY NOTICE**

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and EXPLODED VIEW.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.

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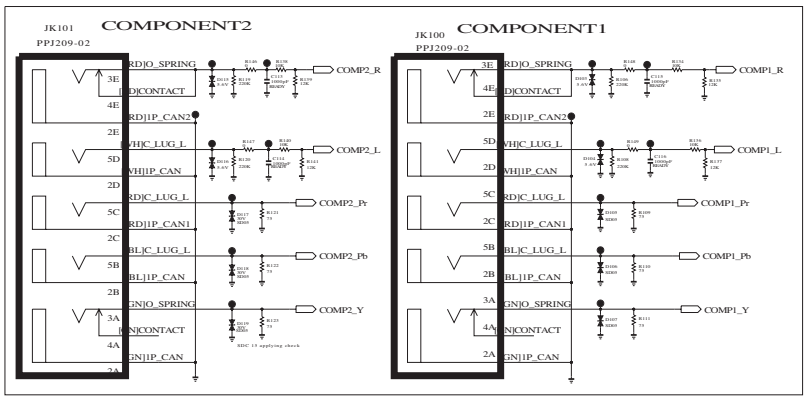
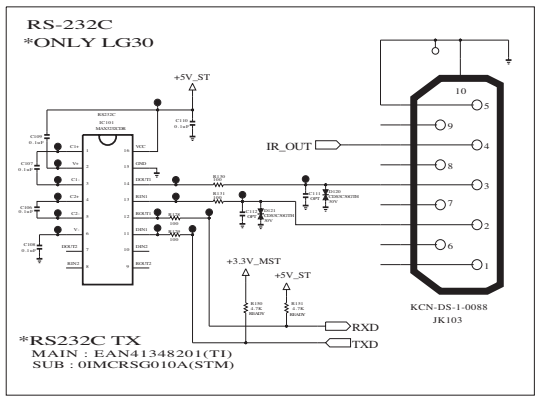
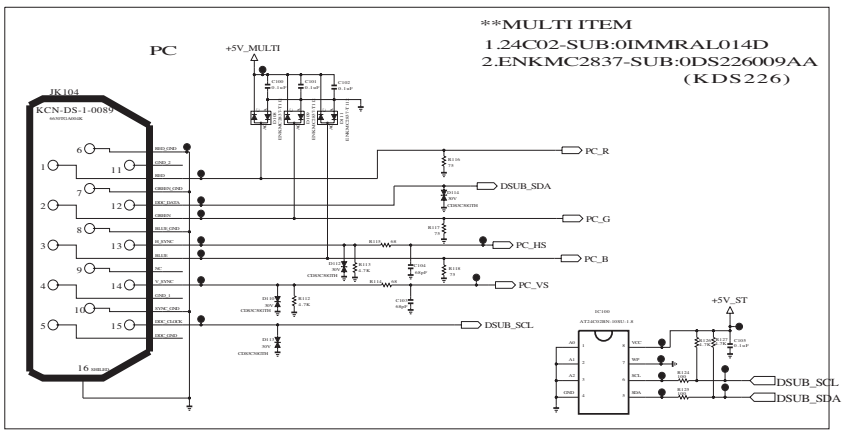
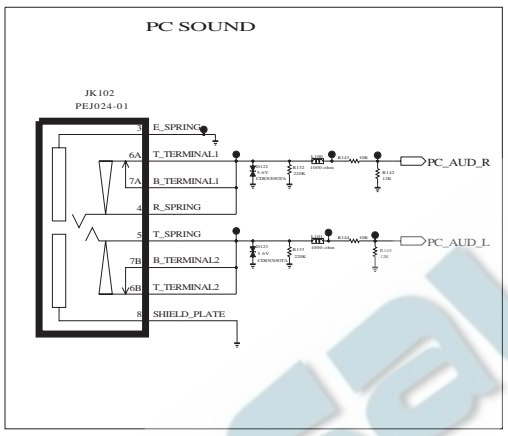
## INPUT1 : COMP1/2,RS232C,PC



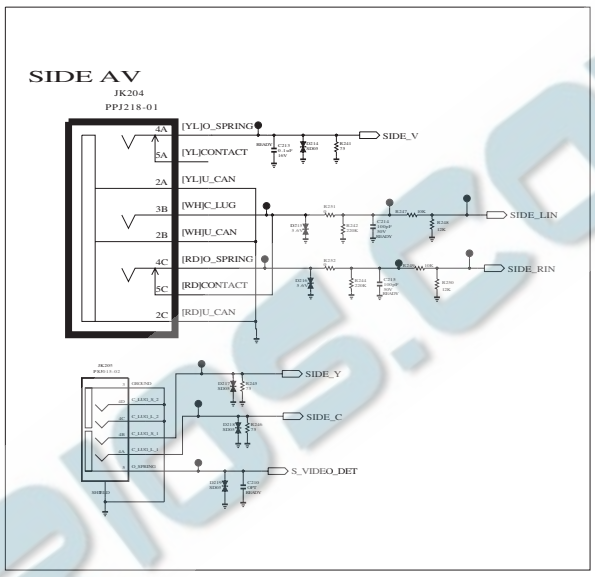




THE ⚠SYMBOL MARK OF THIS SCHEMETIC DIAGRAM INCORPORATES
SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION.
FILRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS
ESSENTIAL THAT ONLY MANUFATURES SPECFIED PARTS BE USED FOR
THE CRITICAL COMPONENTS IN THE⚠SYMBOL MARK OF THE SCHEMETIC.

## INPUT2 : CVBS,SIDE AV

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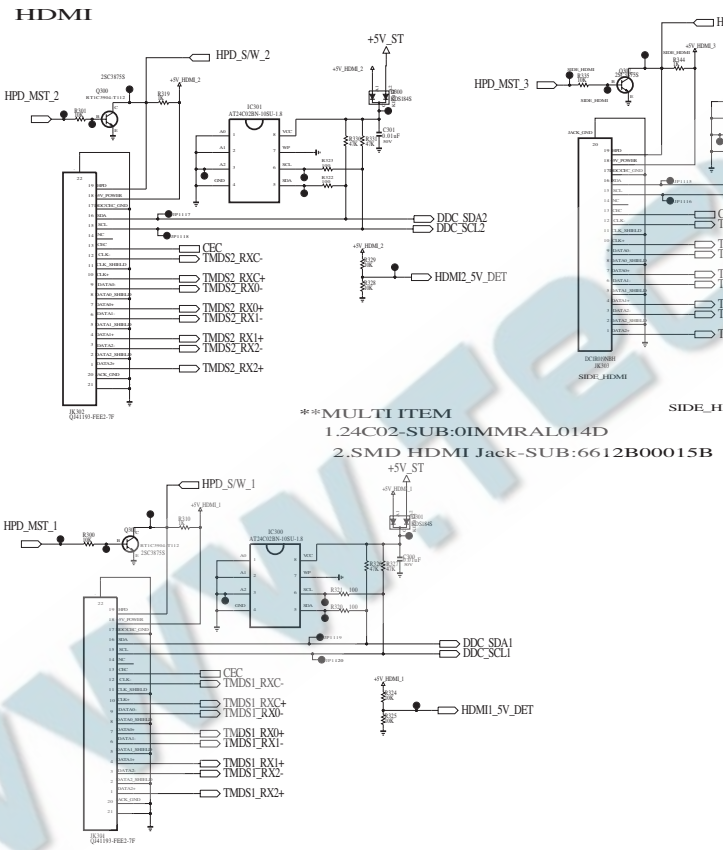
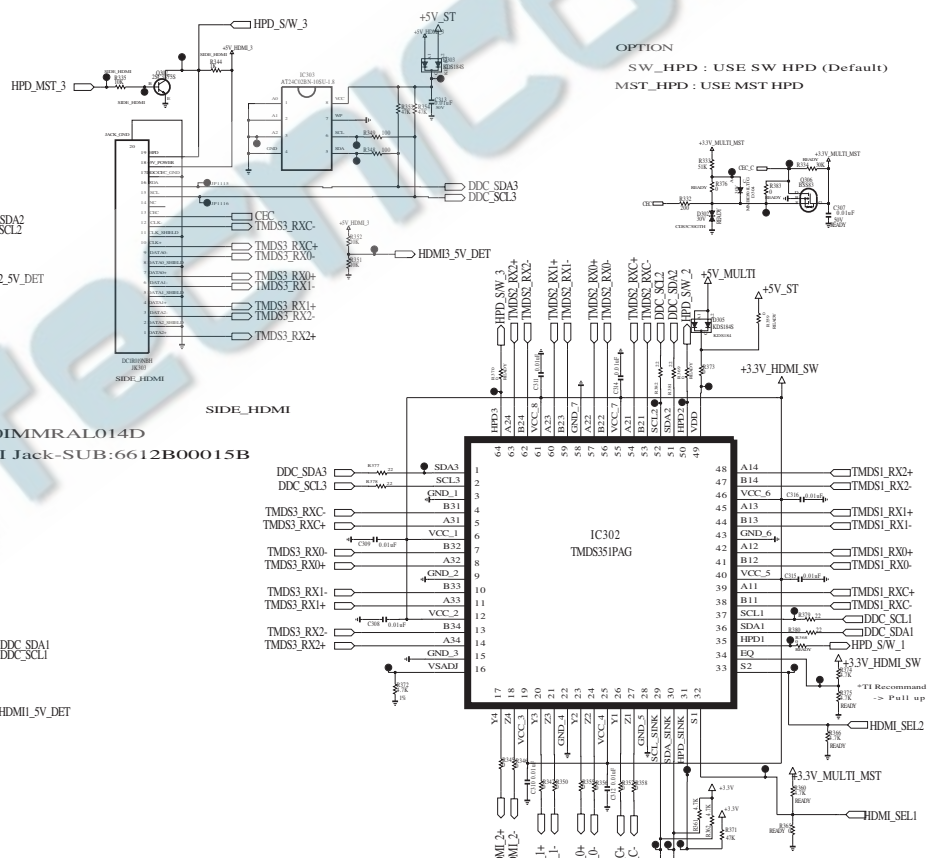
FILRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS
ESSENTIAL THAT ONLY MANUFATURES SPECFIED PARTS BE USED FOR
THE CRITICAL COMPONENTS IN THE⚠SYMBOL MARK OF THE SCHEMETIC.

## HDMI




OPTION
SW_HPD : USE SW HPD (Default)
MST_HPD : USE MST HPD

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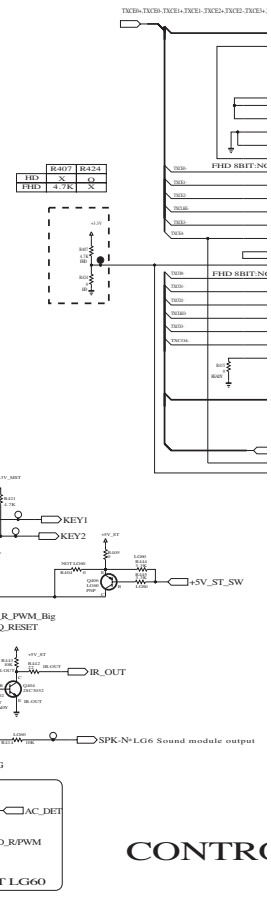
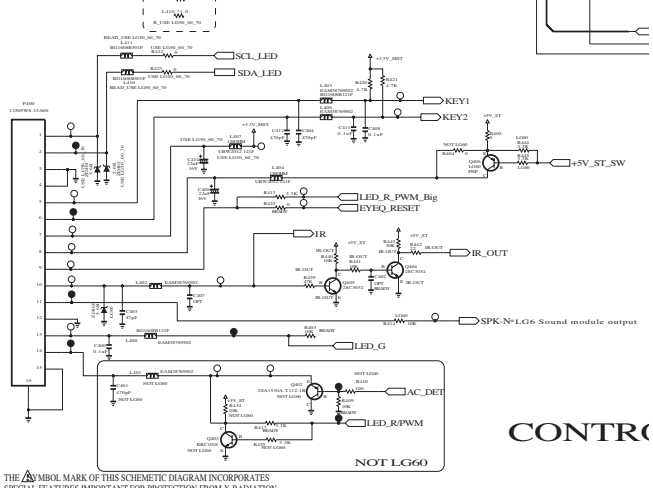
ESSENTIAL THAT ONLY MANUFATURES SPECFIED PARTS BE USED FOR
THE CRITICAL COMPONENTS IN THE⚠SYMBOL MARK OF THE SCHEMETIC.

## PANEL WAFER

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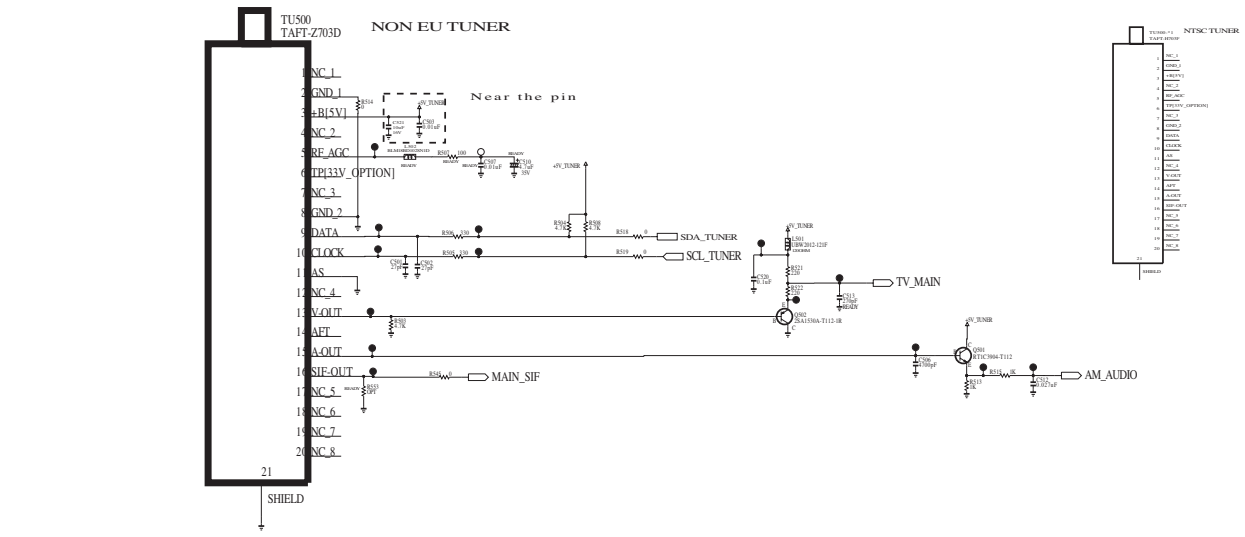
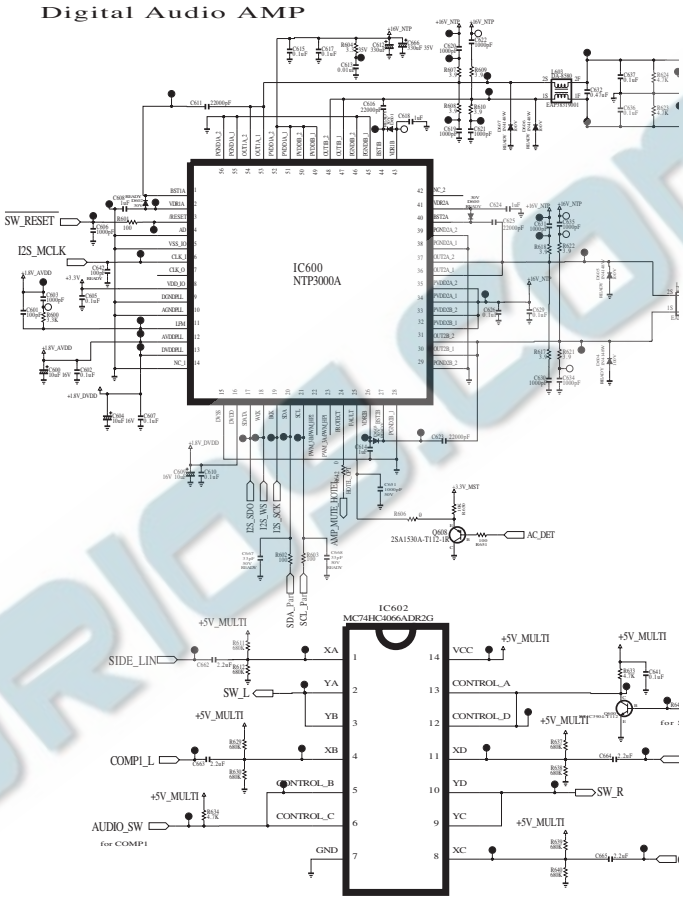
## TUNER




THE ⚠ SYMBOL MARK OF THIS SCHEMETIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM X-RADIATION. FILRE AND ELECTRICAL SHOCK HAZARDS, WHEN SERVICING IF IS ESSENTIAL THAT ONLY MANUFATURES SPECFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE ⚠ SYMBOL MARK OF THE SCHEMETIC.

## Digital Audio AMP

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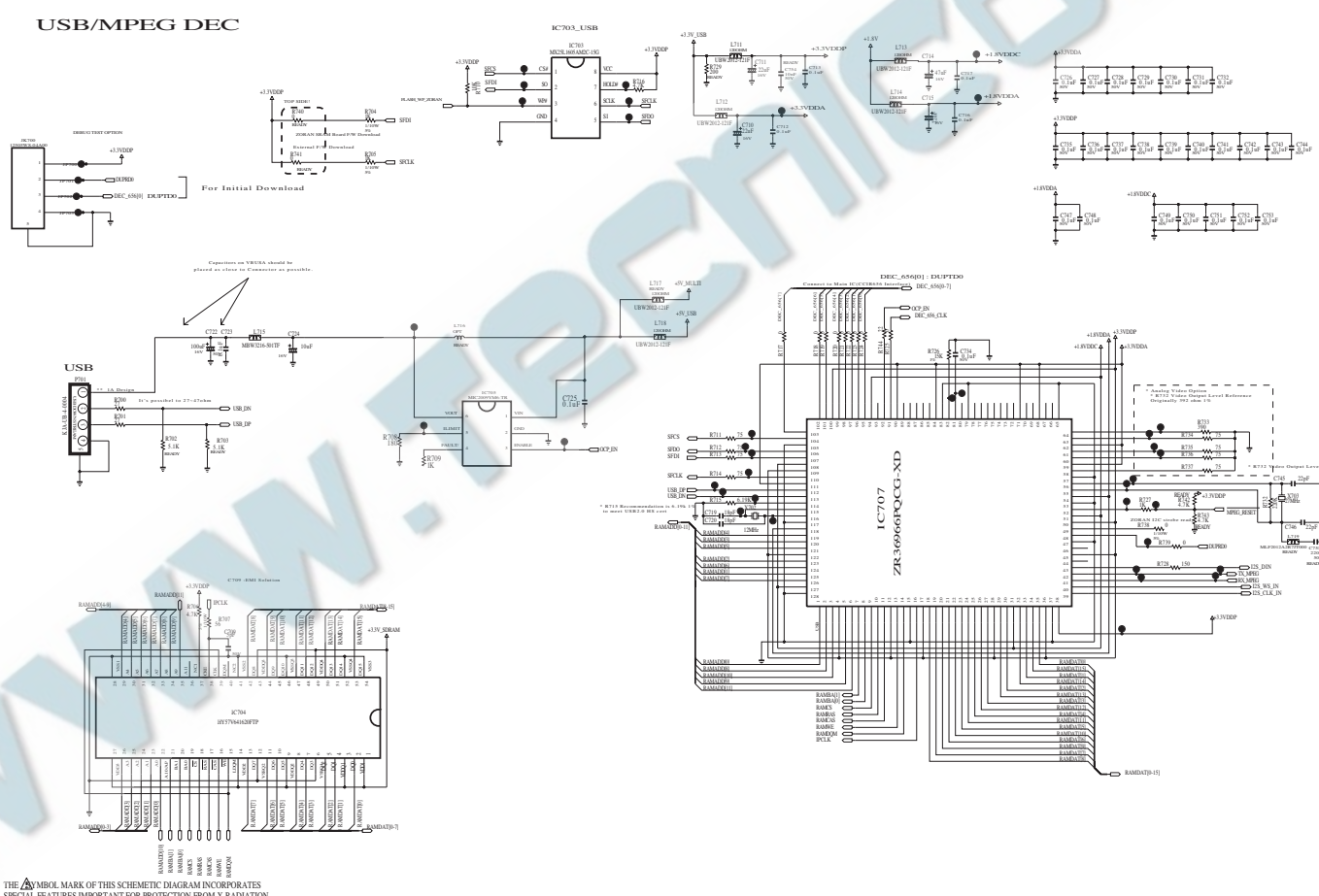
## USB/MPEG DEC

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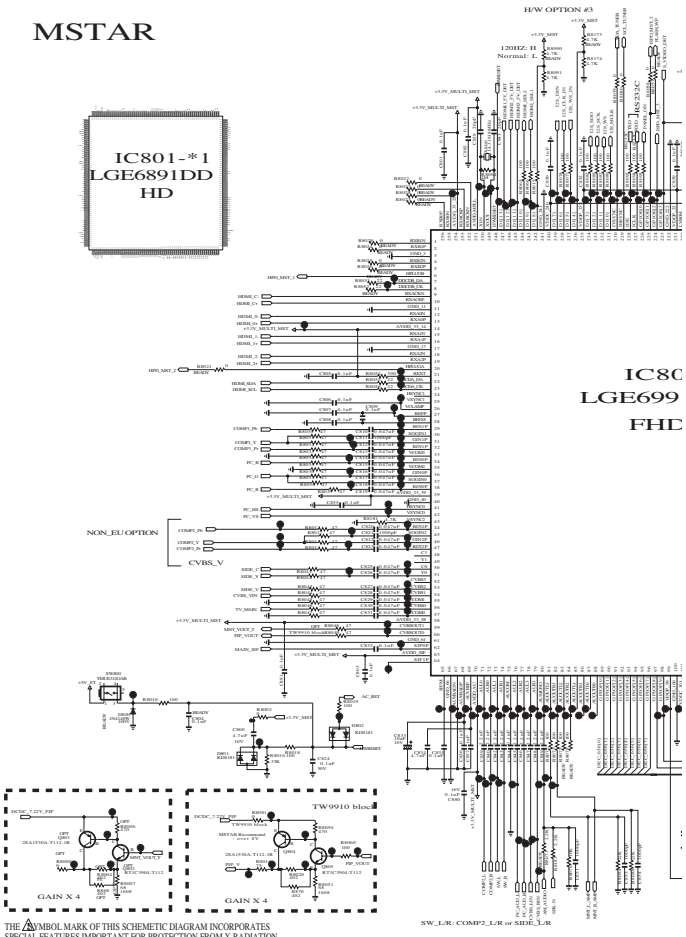
## MSTAR

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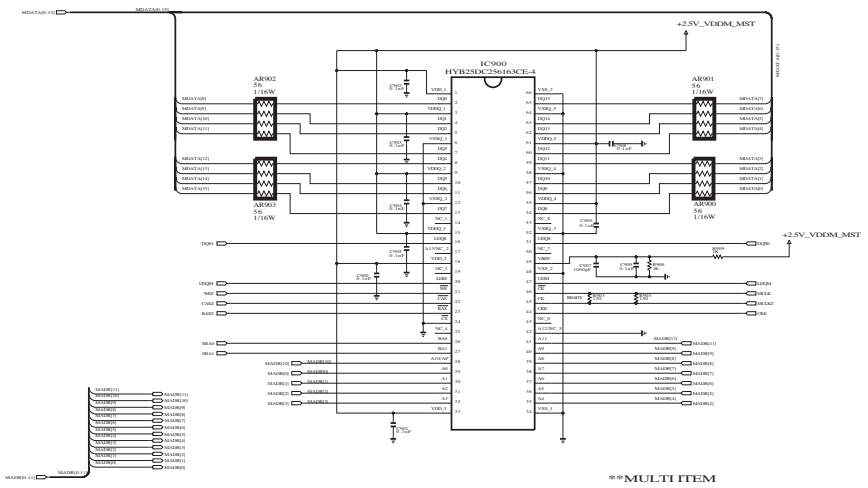
## DDR




**MULTI ITEM
MAIN - QIMONDA : EAN41788501
SUB - HYNIX : EAN31729202

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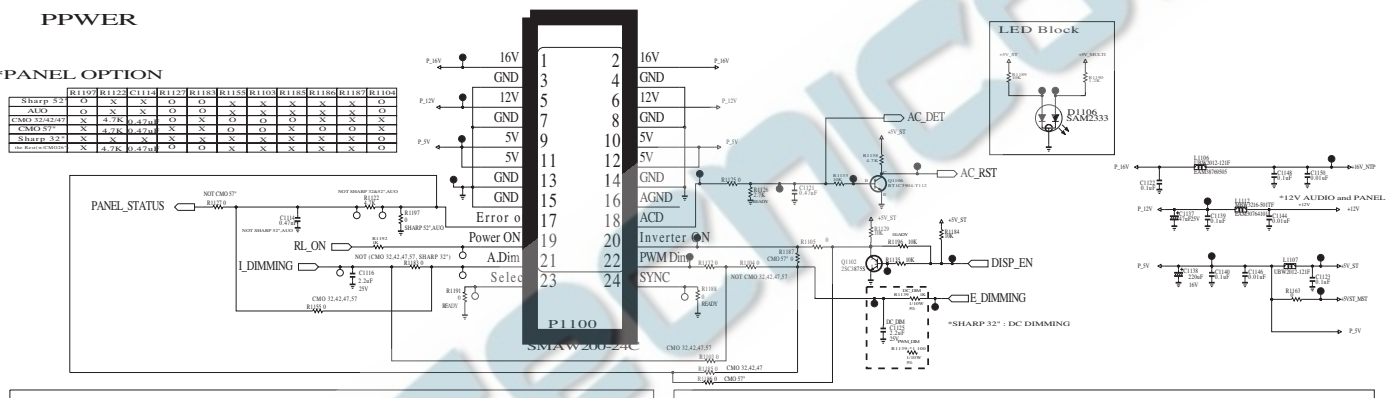
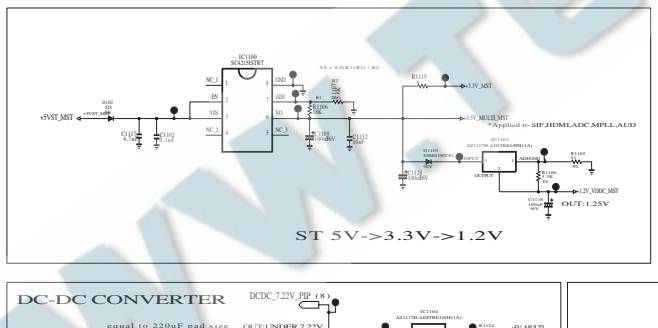
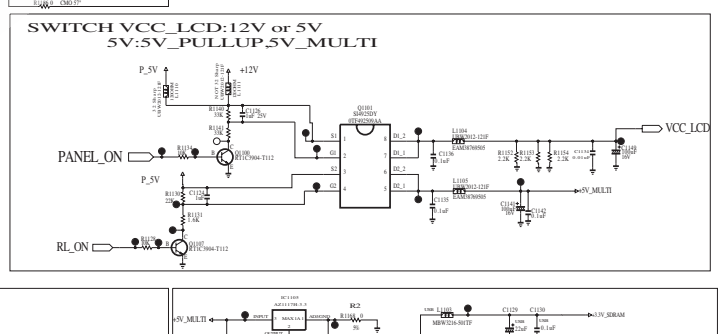
## PPWER

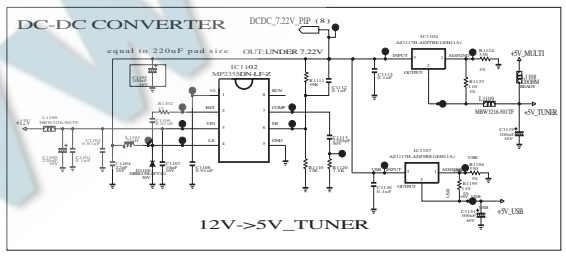
*PANEL OPTION

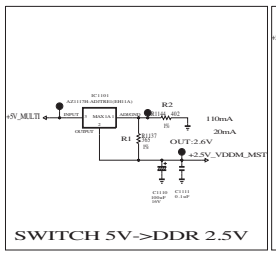
| | R1197 | R1122 | C1114 | R1127 | R1183 | R1155 | R1103 | R1185 | R1186 | R1187 | R1104 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sharp 52 | O | X | X | O | O | X | X | X | X | X | O |
| AUO | O | X | X | O | O | X | X | X | X | X | O |
| CMO 32/42/47 | X | 4.7K | 0.47uF | O | X | O | O | O | X | X | X |
| CMO57 | X | 4.7K | 0.47uF | X | X | O | X | O | O | O | X |
| Sharp 32 | X | X | X | X | X | X | X | X | X | X | O |
| the Rest o/CMO32 | X | 4.7K | 0.47uF | O | O | X | X | X | X | X | O |

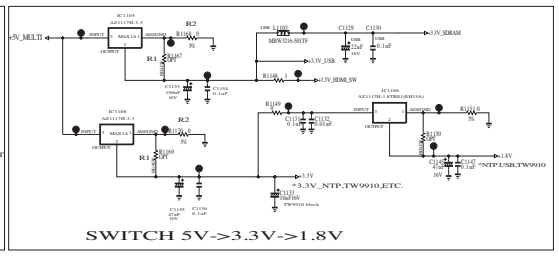
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